





MUS MACLEARI.

I. MAMMALIA.

By OLDFIELD THOMAS.

The Mammals collected at Christmas Island consist of four specimens, of which three belong to a species of Flying-Fox (*Pteropus*) and the fourth is a large Rat. Remarkable to say, both the species are new, but whether it will be found in the future that both are peculiar to the island it is at present impossible to say. On the whole the probability is that the *Pteropus* really is peculiar, since members of this genus are often extraordinarily confined in the extent of their range, while, on the other hand, it is by no means unlikely that the Rat will turn out to be also a native of Java.

As to the affinities of the Christmas-Island fauna to that of other places, no definite conclusions can be drawn from so small a collection; it must therefore suffice to remark that the closest ally of the *Pteropus* is a native of Lombock, while the Rat has its nearest relatives in the Philippine Islands and Celebes.

PTEROPUS NATALIS, sp. n. (Plate XLI.)

a, b, c. Two adult females and a new-born male.

Colour (♀) uniformly deep shining black all over, the only variation in tone being that while the head is absolutely black, there is a faint brownish tinge in the fur of the body. Fur thick, soft, and woolly, more so of course upon the head and neck than on the back, but nowhere really straight; on the fore limbs above it extends along the humerus, and thinly along the proximal half of the forearm; on the back its least breadth is about $2\frac{1}{2}$ inches; on the hind limbs it extends thinly to about halfway down the tibia. Below, the humerus, proximal half of forearms, hind limbs to just below the knee, and wing-membranes between the body and a line drawn from the centre of the forearm to the knee are all thinly clothed with scattered woolly black hairs. Muzzle broad and obtuse. Ears rather short, laid forward they barely reach to the posterior canthus of the eye; their anterior edges evenly but slightly convex, their tips pointed or narrowly rounded off, their outer margins straight or faintly concave for their upper half, markedly convex for their lower; their basal half thinly hairy internally; their distal half quite naked, black. Wings arising on the back about an inch apart. Interfemoral membrane narrow, quite hidden in the fur.

Teeth, especially the canines, small and short. Upper incisors forming an evenly curved series, touching one another, their total breadth 5 millim. Canines short, 5 millim. from cingulum to tip behind, thin, and acutely pointed; their postero-internal basal ledge proportionally rather broad. Anterior premolars minute or absent. Posterior premolars and first molar short, evenly oval in section; the surface of the molars and last premolar singularly smooth and rounded; the cusps but little developed, and merely consisting of low rounded ridges; last molar circular in section, rather larger than one of the outer incisors, about 1.5 millim. in diameter.

Lower incisors small, separated in the centre, the inner about half the size of the outer, the combined diameters of those of each side 2 millim. Canines proportionally still shorter than in the upper jaw, 3·5 millim. from cingulum to tip behind; their basal ledge broad. Anterior premolar very large, nearly filling up the space between the canine and second premolar, its size in cross section nearly equal to that of the canine. Molars smooth and rounded, as in the upper jaw. Last molar in section about one-third the size of the anterior premolar, and three quarters that of the last upper molar.

Dimensions of the type, specimen *a*, an adult female in spirit:—Head and body 210 millim.; head 61; muzzle 22; ear, above crown 26, from notch at base 28; forearm 127 (=5·0 in.); thumb, without claw, 43; index finger 90; tibia 62; calcaneum 21.

Skull:—Basal length 52; greatest breadth 30; supraorbital foramen to tip of nasals 24·5; interorbital breadth 6·5; intertemporal breadth 5·0; breadth from tip to tip of postorbital processes 19·1; palate, length 32, breadth outside first molar 16·0; length of first molar 5·0.

It is unfortunate that of this new species the only specimens of any use for description are females, since it might happen that, as is sometimes the case in *Pt. nicobaricus*, while the females are wholly black, the males have the usual yellow or orange tippet. It is therefore much to be hoped that male specimens will soon be obtained and the point settled. In any case, however, *Pt. natalis* is a very well-marked species. From *Pt. nicobaricus* it may be distinguished by its much smaller size and smaller shorter molars, and especially by its much shorter and feebler canines—the latter character, in fact, distinguishing it from all the other allied species except *Pt. lombocensis*. *Pt. pselaphon*, another wholly black species of about the same size, a native of Bonin, may be separated at once by its hairy legs, the hind limbs being closely haired right down to the feet. *Pt. gouldi*, also generally black, has a forearm 165 millim. long, and has also large teeth and long canines bearing no resemblance to those of the present species.

On the whole *Pt. natalis* seems to be most nearly allied to *Pt. lombocensis*, Dobs.¹, as yet only known from Lombock, which also has similarly short canines and is of about the same size. That animal, however, is of a dull light brown colour, with the neck pale yellow. Its teeth, especially the anterior molar, are narrower and lighter than those of *Pt. melas*; the first lower premolar and the last molars both above and below are much smaller, and the basal ledges to the canines are decidedly narrower than in *Pt. natalis*. In the skull, again, *Pt. lombocensis* has a shorter broader muzzle, greater spread of zygomata, broader interorbital space, and larger postorbital processes than the present species. Of course in comparing the colours of these two species the question of sex again arises, as the only known specimens of *Pt. lombocensis* are both males; but considering not only the differences in the skull and teeth, but also the fact that even if the male of *Pt. natalis* have a yellow tippet, it would in all probability have at least its head and body jet-black like

¹ Cat. Chir. B. M. p. 34 (1878).

the female, I should certainly not be justified in assigning the Christmas-Island specimens to *Pt. lombocensis*. It should also be noticed that the little hair that has appeared on the crown and between the shoulders of specimen *c*, a new-born male, is wholly black; its neck is unfortunately still entirely naked.

MUS MACLEARI, sp. n. (Plate XLII.)

a. Adult female.

Fur very long, thick, and coarse, but not or very slightly spinous, thickly intermixed on the back with enormously long piles from 2 to 2½ inches in length. General colour grizzled rufous-brown, belly but little lighter pale rufous. Shorter hairs everywhere pale slaty grey at base, shining red at tip; longer piles uniformly black; the general tint of the dorsal surface not unlike that of *Arvicola amphibius*, except that the median line is a good deal darker owing to the great number of the longer black piles there present. Whiskers very long, many of them more than 3 inches in length, mostly black. Ears naked, black, broad, short and rounded, their breadth about equal to their length; laid forward they fall short of the eye by about a quarter of an inch. Limbs coloured externally like back, internally dull grey; upperside of hands and feet uniform dark brown; sole-pads six, very broad, flat and rounded, evidently adapted for climbing; pad at the base of the fifth toe with a secondary pad at its postero external angle. Claws, both anterior and posterior, short, stout, curved, and sharply pointed, brown horn-colour, that of the hallux markedly shorter than the rest; pollex with a broad nail as usual; fifth hind toe without claw reaching just to the end of the first phalanx of the fourth.

Tail very long, its posterior half black all round, its distal half white or yellow, thinly and finely haired with short grey hairs, not hiding the scales; the scales large, the rings averaging just 10 to the centimetre.

Palate-ridges 3-5. Mammæ 4, one axillary and one inguinal pair.

Skull large and strong. Nasals extending to about a millimetre past the level of the anterior edge of the orbit. Supraorbital edges beaded, but the beading not continued so far forward as in *M. everetti*. Interparietal large. Front edge of the anterior zygoma-root very prominent, projecting forwards. Palatal foramina very long, their posterior end about one millimetre in front of the level of m^1 . Bullæ small and flattened.

Incisors thick and strong, much bevelled externally, their faces dull orange-yellow above and yellow below, but apparently the colour has been more or less affected by spirit. Molars of medium size.

Measurements of the type, an adult female in spirit:—Head and body 222 millim.; tail 248; hind foot 48·5; ear 13; head 64; forearm and hand 66; last hind foot-pad 10·5; heel to front of last foot-pad 26.

Skull:—Basal length 47·5; greatest breadth 26·2; nasals, length

19·5, greatest breadth 5·7; interorbital constriction, least breadth 7·0; interparietal, length 6·6, breadth 11·5; length of base of anterior zygoma-root 6·0; palate, length 30·0, breadth outside m^1 10·3, inside 4·4; palatal foramina, length 10·1; back of incisors to m^1 (alveoli) 15·7; upper molar series 9·0.

This fine new Rat belongs to a small group of species inhabiting the East-Indian Archipelago, all of which agree with *Mus macleari* in being of large size, with very long tails tipped with yellow, and with small rounded ears. Their differential characters as compared to *M. macleari* are best put in tabular form:—

M. macleari. Mammæ 1—1=4. Dorsal piles present. Front edge of anterior zygoma-root projecting, very convex. Palatal foramina long. Bullæ very small.

Christmas Island.

M. celebensis, Gray¹. Mammæ 1—2=6. No dorsal piles. Front edge of anterior zygoma-root not projecting. Palatal foramina short.

Celebes.

M. xanthurus, Gray². Mammæ 1—2=6. Long dorsal piles present. Front of zygoma-root but little projecting. Palatal foramina long.

Celebes.

M. everetti, Günth.³ Fur long, but the piles not enormously lengthened. Front of zygoma-root convex. Palatal foramina long. Bullæ very large.

Philippines.

M. meyeri, Jent.⁴ Fur without lengthened piles. Supraorbital edges much developed. Front of zygoma-root slightly convex. Palatal foramina short. Teeth very large.

Celebes.

M. muelleri, Jent.⁵ Mammæ 2—2=8. No dorsal piles. Tail unicolor. Front edge of zygoma convex. Palatal foramina short. Teeth rather small. Bullæ medium.

Sumatra and Borneo.

This last does not properly belong to the present group of species, but is only introduced to complete the list of those of which it is necessary to mention the distinguishing characters when describing *M. macleari* as new. All these species also differ from *M. macleari* in having the general colour grey or yellow instead of rufous. No other described species could possibly be confounded with the present most interesting new form, with which I have much pleasure in connecting the name of Capt. Maclear, of H.M.S. 'Flying-Fish,' to whom the Museum is indebted for the Christmas-Island specimens.

³ P. Z. S. 1867, p. 598.

⁴ P. Z. S. 1879, p. 75.

⁵ *Op. cit.* ii. p. 16 (1879).

² *Loc. cit.*

¹ Notes Leyd. Mus. i. p. 12 (1878).